Impact Matrix Results

North Pacific Landscape Conservation Cooperative
Science and Traditional Ecological Knowledge Subcommittee

July 10, 2012

Overview

- Summary of impact matrix expectations
- Overview of the S-TEK member response—key stats
- Results
  - Raw scores totaled
  - Cells: ranking weighted and unweighted votes
  - Rows and Columns: ranking resources and drivers
- Group discussion: strengths, weaknesses, challenges of using this approach
- Narrowing the issues: What do we do with the results? Karen will lead…

The Impact Matrix: Concept and Template

NAME:

0 Votes Used

100 Votes Remaining

North Pacific Landscape Conservation Cooperative Climate Change Impact Matrix

Valued natural and cultural resources		Primary Climate Drivers: Atmospheric Composition	Air temperature	Precipitation	Sea Level	Storms	Ocean Condition	Floods/Droughts	Secondary Climate Drivers: Hydrologic Rigime	Marine Currents	Marine Water Quality	Fresh Water Quality	Glacier Mass Balance	Geomorphic Change	Invasives, Disease, Pests	Fire Regime	Phenology	Total
Habitats	Forest																	0
	Alpine																	0
	Lowlands																	0
	Islands																	0
	Riparian																	0
	Lake/Wetland																	0
	River/Stream																	0
	Marine Shoreline																	0
	Marine Nearshore																	0
	Estuaries																	0
	Groundwater																	0
Species Populations	Marine Mammals																	0
	Land Mammals																	0
	Seabirds																	0
	Land/water birds																	0
	Anadromous Fish																	0
	Forage fish																	0
	Ground/rockfish																	0
	Herps																	0
	Shellfish/Invertebrates																	
	Epiphytes																	0
Other	Biological Communities																	0
	Food Webs/Productivity																	0
	Connectivity																	0
	Carbon Storage																	0
	Traditional Resources																	0
	Sites																	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

S-TEK Overall Response

- 432 potential driver-resource interactions (cells)
- More than half of S-TEK members voted (n=20, 100 votes per individual)
- Good general agreement emerged between:
  - Unweighted votes (each cell vote counted as 1)
  - Weighted votes (cell votes weighted by score)

S-TEK Overall Response

- LOW levels of interest for some issues:
  - 190 cells received no votes
  - 242 cells received at least one vote, BUT:
    - 87 scored by only one person
    - 56 scored by only two people
    - 29 received a total weighted score of just 1
    - 18 received a total weighted score of just 2
- Good basis for identifying some low priority issues

S-TEK Overall Response

- HIGH levels of interest for other issues:
  - 38 cells indicated by 5 or more of voters (1/4 of voters)
  - 10 cells indicated by 10 or more voters (1/2 of voters)
  - 22 cells received a total weighted score >20 (including all 10 cells scored by 10 or more voters)
- Good basis for identifying some high priority issues

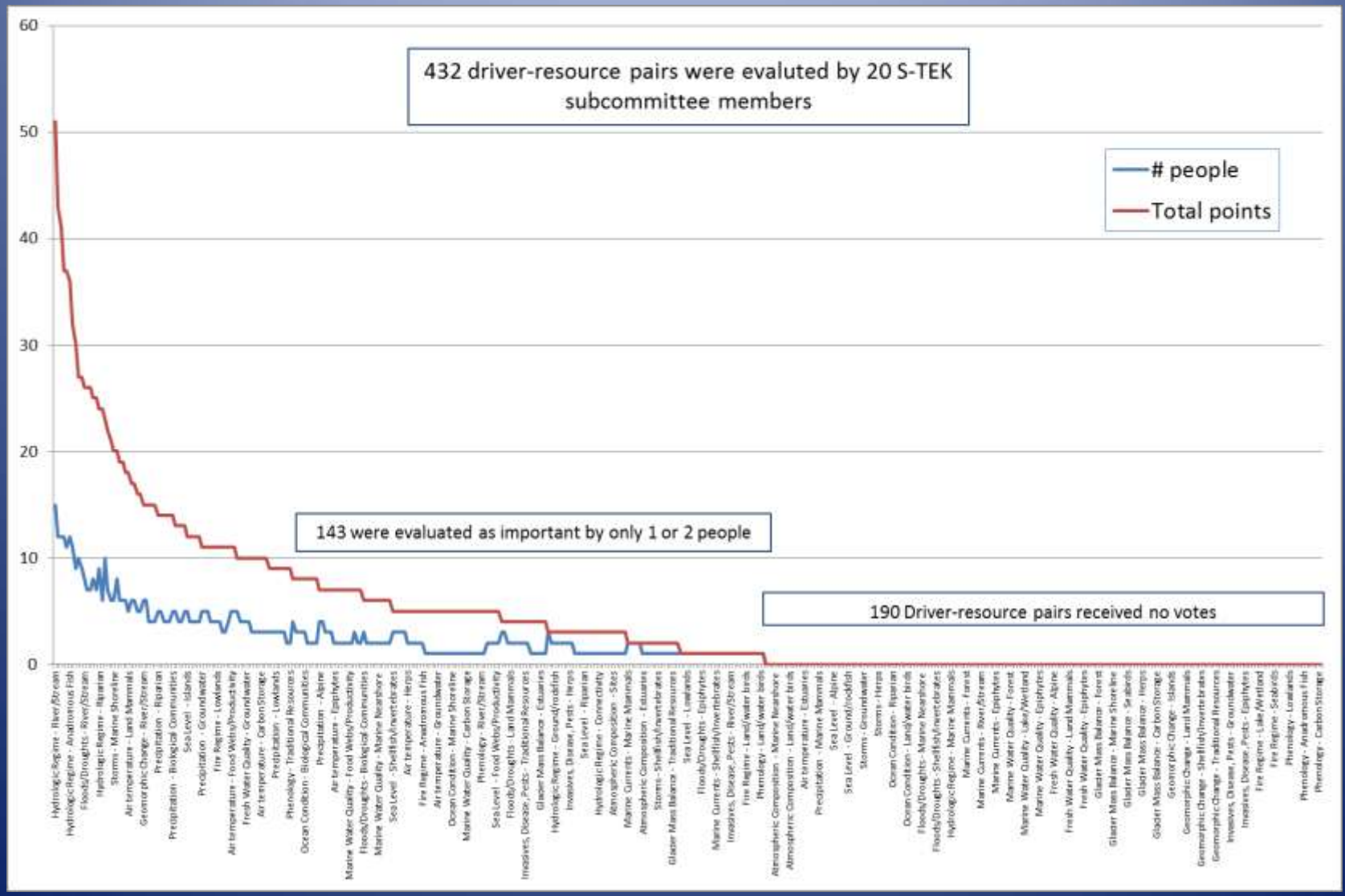
Raw Score Totals

(n=20; 2,000 total points)

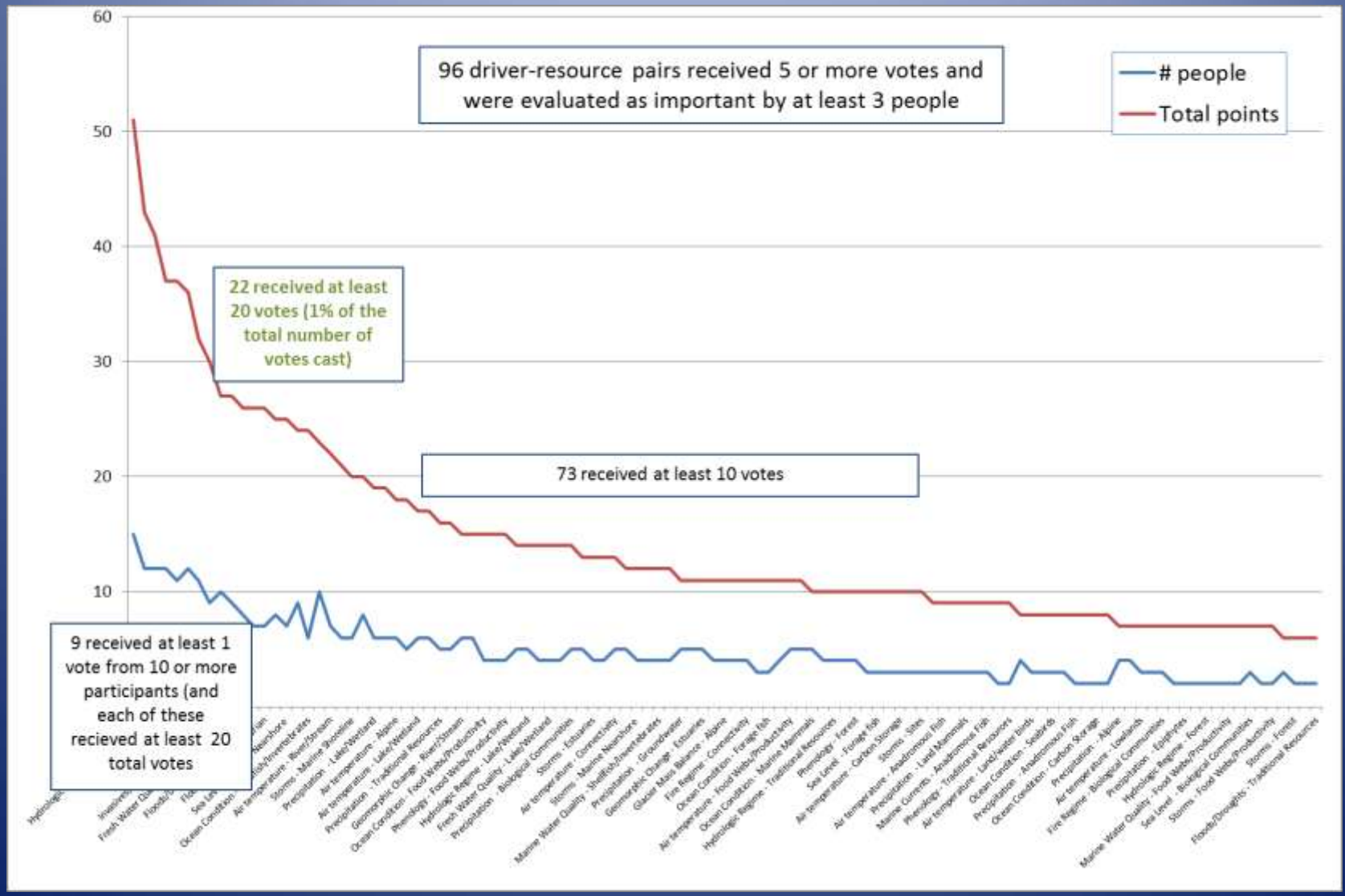
North Pacific Landscape Conservation Cooperative Climate Change Impact Matrix

		Primary Climate Drivers						Secondary Climate Drivers									
Valued natural and cultural resources		Atmospheric Composition	Air temperature	Precipitation	Sea Level	Storms	Ocean Condition	Floods/Droughts	Hydrologic Regime	Marine Currents	Marine Water Quality	Fresh Water Quality	Glacier Mass Balance	Geomorphic Change	Invasives, Disease, Pests	Fire Regime	Phenology	Total
Habitats	Forest	2	9	11	0	2	0	5	2	0	0	0	0	0	11	12	4	12
	Alpine	1	6	4	0	0	0	1	1	0	0	0	4	0	0	0	2	6
	Lowlands	0	3	3	1	1	1	4	1	1	0	0	0	0	2	4	0	4
	Islands	0	1	1	5	1	0	0	0	0	0	0	0	0	1	0	1	5
	Riparian	1	3	5	1	0	0	7	9	0	0	1	0	0	2	1	1	9
	Lake/Wetland	1	6	6	0	0	0	1	5	0	0	4	0	0	0	0	1	6
	River/Stream	1	7	7	0	1	0	8	15	0	0	9	3	6	1	2	1	15
	Marine Shoreline	0	1	0	12	6	1	0	0	2	1	0	0	3	0	0	0	12
	Marine Nearshore	0	1	1	7	4	3	0	0	4	2	1	0	0	1	0	0	7
	Estuaries	1	0	3	12	4	4	2	4	2	2	2	1	5	0	0	0	12
	Groundwater	0	1	5	1	0	0	4	10	0	1	4	0	1	0	1	1	10
Species	Mammals	0	1	0	1	0	5	0	0	2	3	0	0	0	0	0	1	5
Populations	Mammals	0	5	3	0	0	0	2	1	0	0	0	0	0	2	3	1	5
	Seabirds	0	0	0	2	1	3	0	0	3	1	0	0	0	0	0	0	3
	Land/water birds	0	3	3	0	0	0	2	1	0	0	0	0	0	1	1	1	3
	Anadromous Fish	1	3	2	1	1	4	5	12	3	4	10	0	1	1	2	0	12
	Forage fish	0	0	0	3	1	3	0	2	3	2	0	0	1	1	0	0	3
	Ground/rockfish	0	0	0	0	0	2	0	2	2	2	0	0	0	0	0	0	2
	Herps	0	2	2	1	0	1	3	1	0	0	2	0	0	2	0	2	3
	Shellfish/Invertebrates	0	1	1	3	1	6	0	1	1	4	2	0	0	0	0	1	6
	Epiphytes	1	2	2	0	0	0	1	0	0	0	0	0	0	0	2	0	2
Other	nmunities	2	8	5	3	1	3	3	3	1	0	0	0	0	8	3	6	8
Food Webs/Productivity		2	5	5	2	2	4	2	1	1	2	2	0	0	6	1	4	6
	Connectivity	1	5	4	2	2	1	4	1	0	0	0	1	1	0	4	0	5
	Carbon Storage	2	3	3	1	1	2	3	0	0	1	0	0	0	2	6	0	6
	Traditional Resources	2	4	5	5	1	2	2	4	0	2	3	1	0	2	4	2	5
	Sites	1	2	2	6	3	0	0	0	0	0	0	0	2	0	1	0	6
	Total	2	9	11	12	6	6	8	15	4	4	10	4	6	11	12	6	

Cell Ranking, Weighted and Unweighted Scores

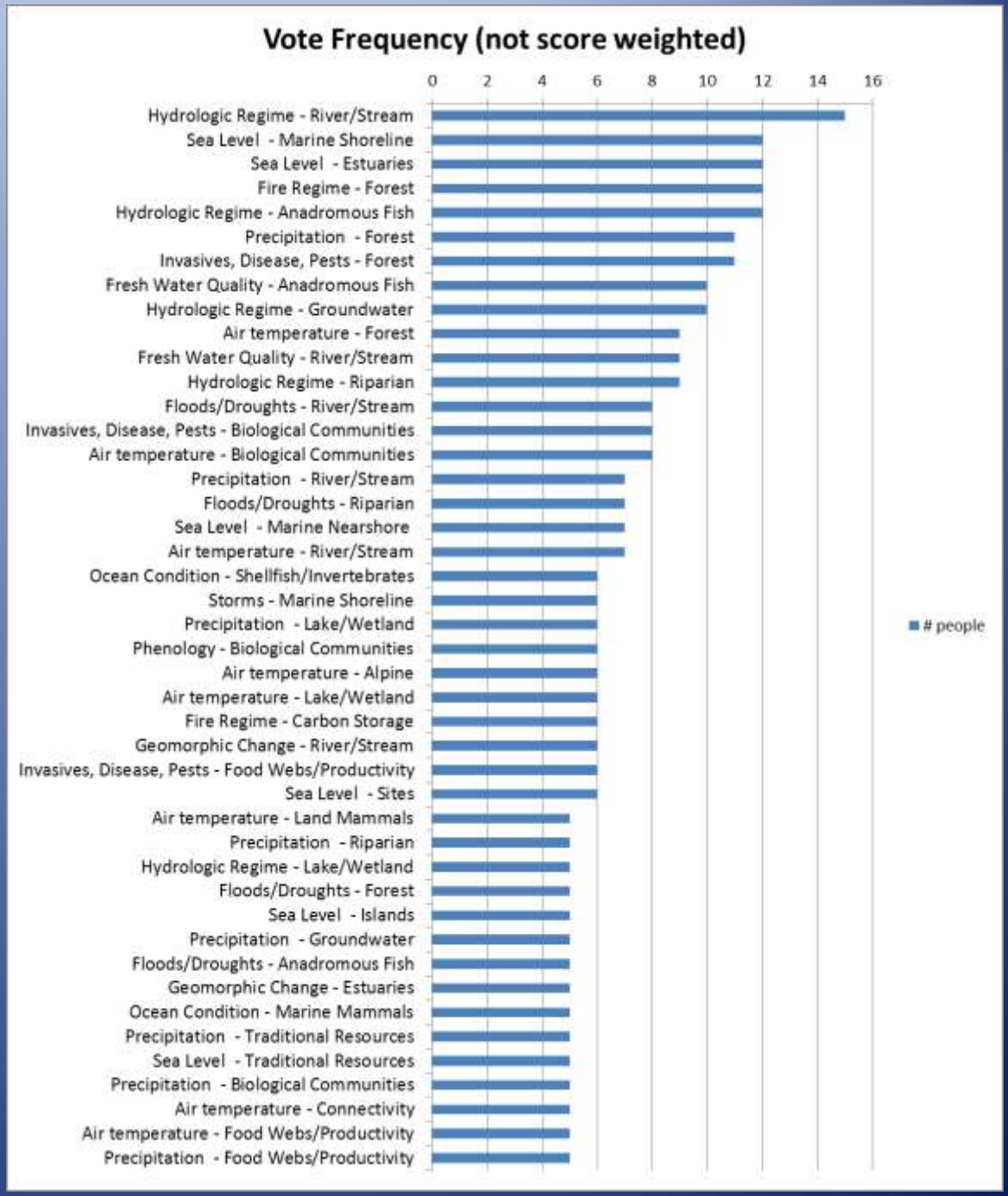


Zooming in to High Ranking Cells



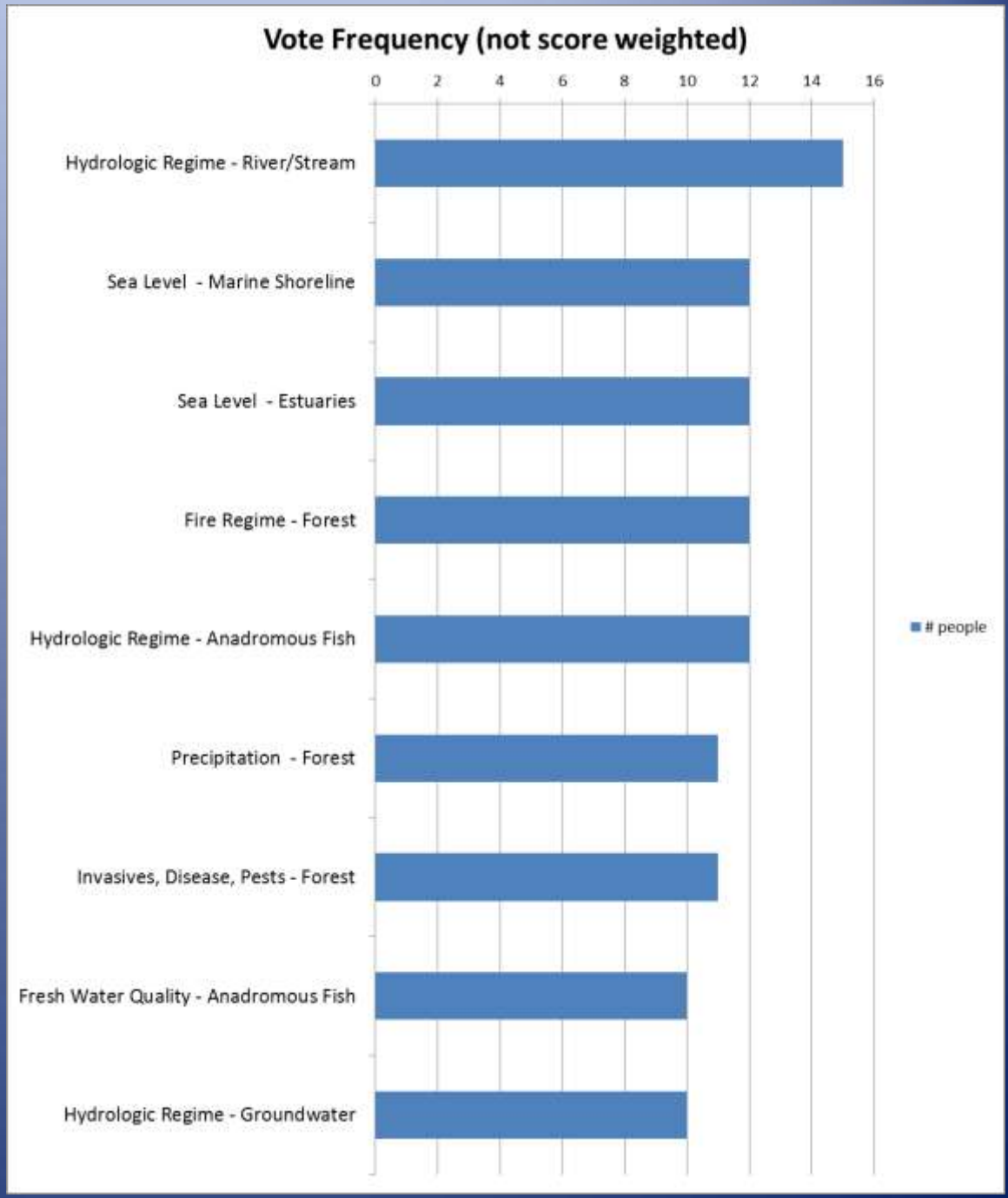
Ranked on Unweighted Votes

(Cells with >5 votes)



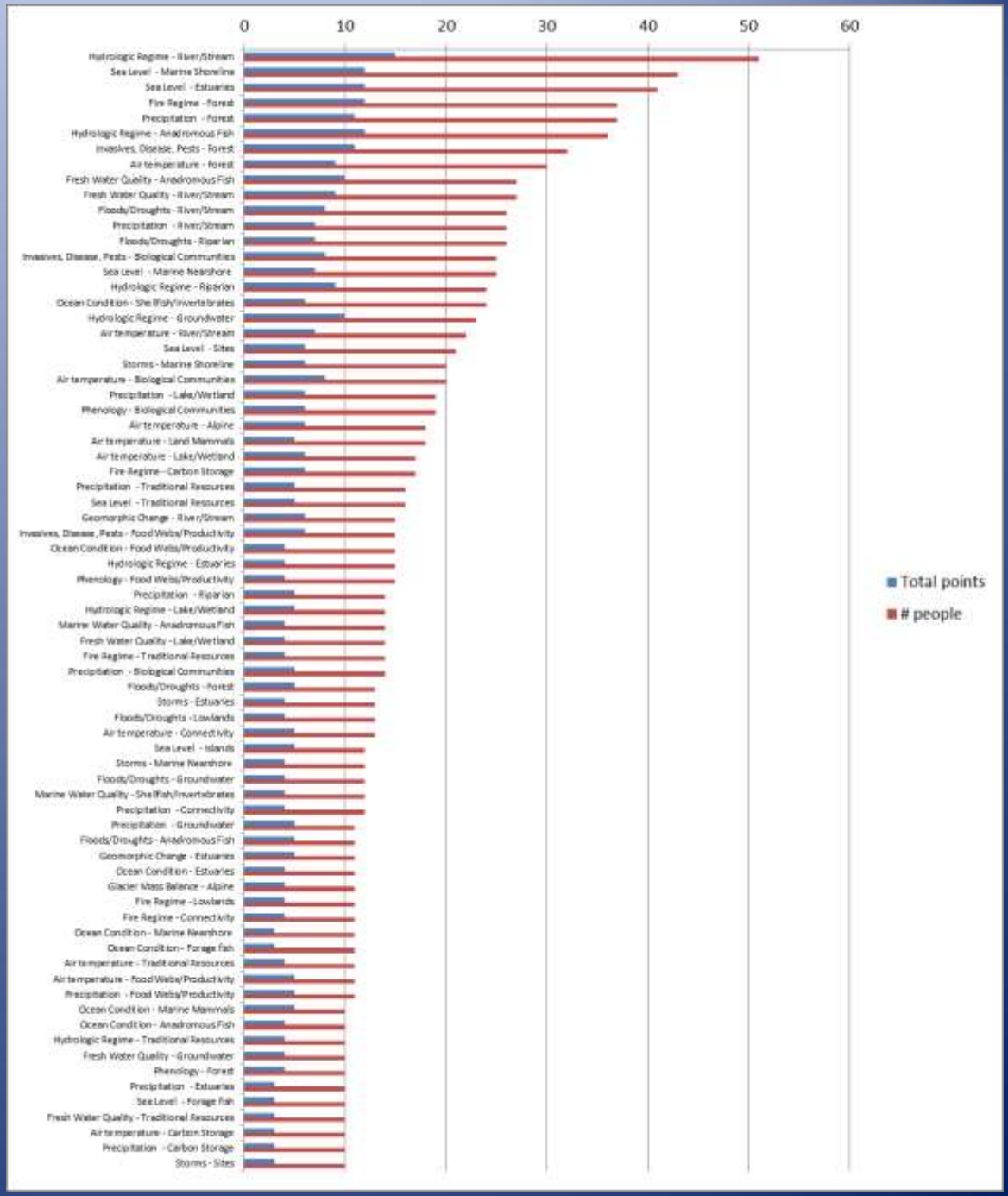
Zooming in on Unweighted Ranking

(Cells with >10 votes)



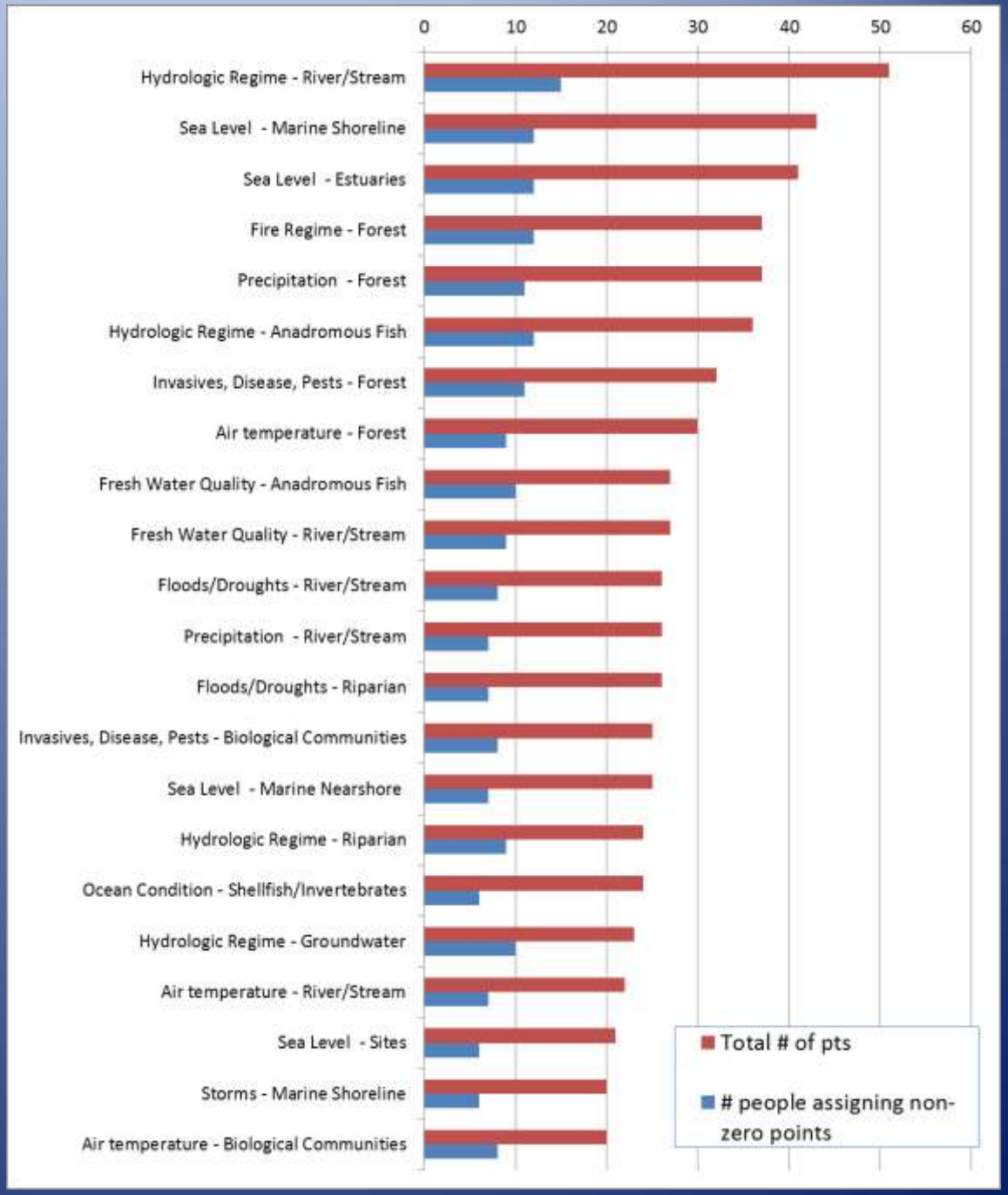
Ranked on Weighted Votes

(Cells With >10)

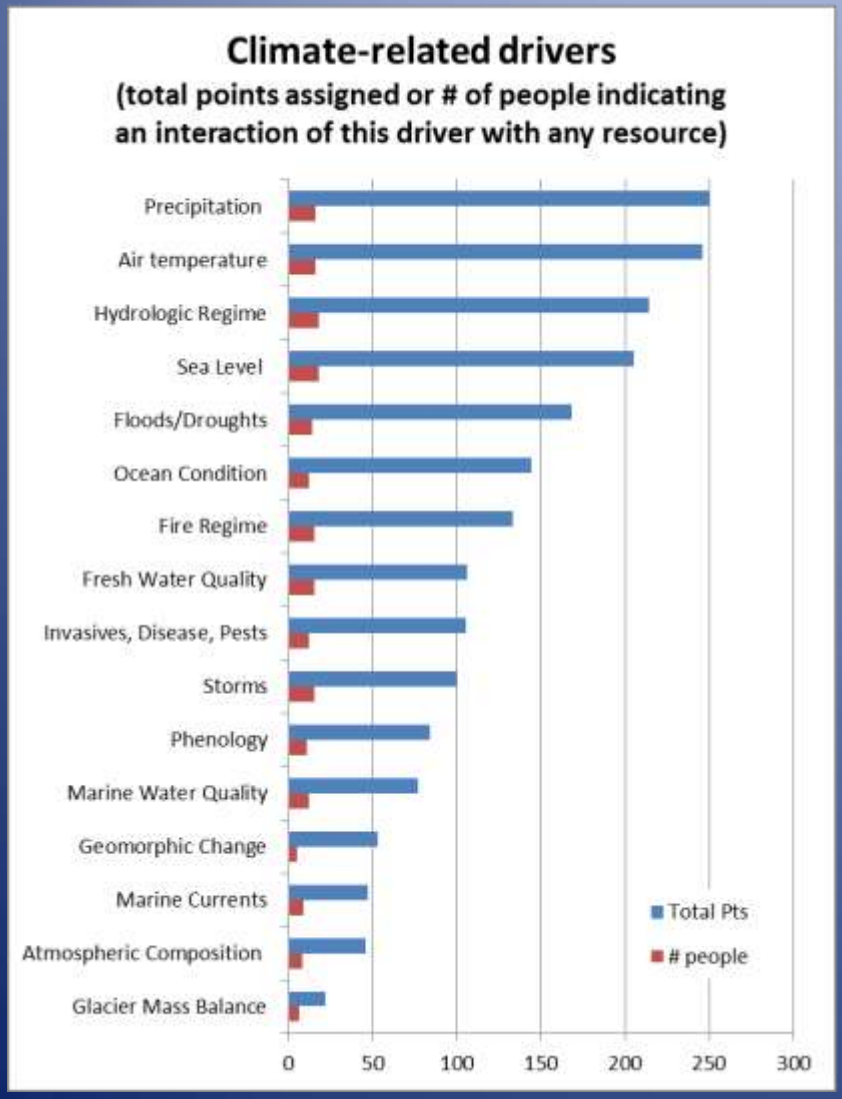


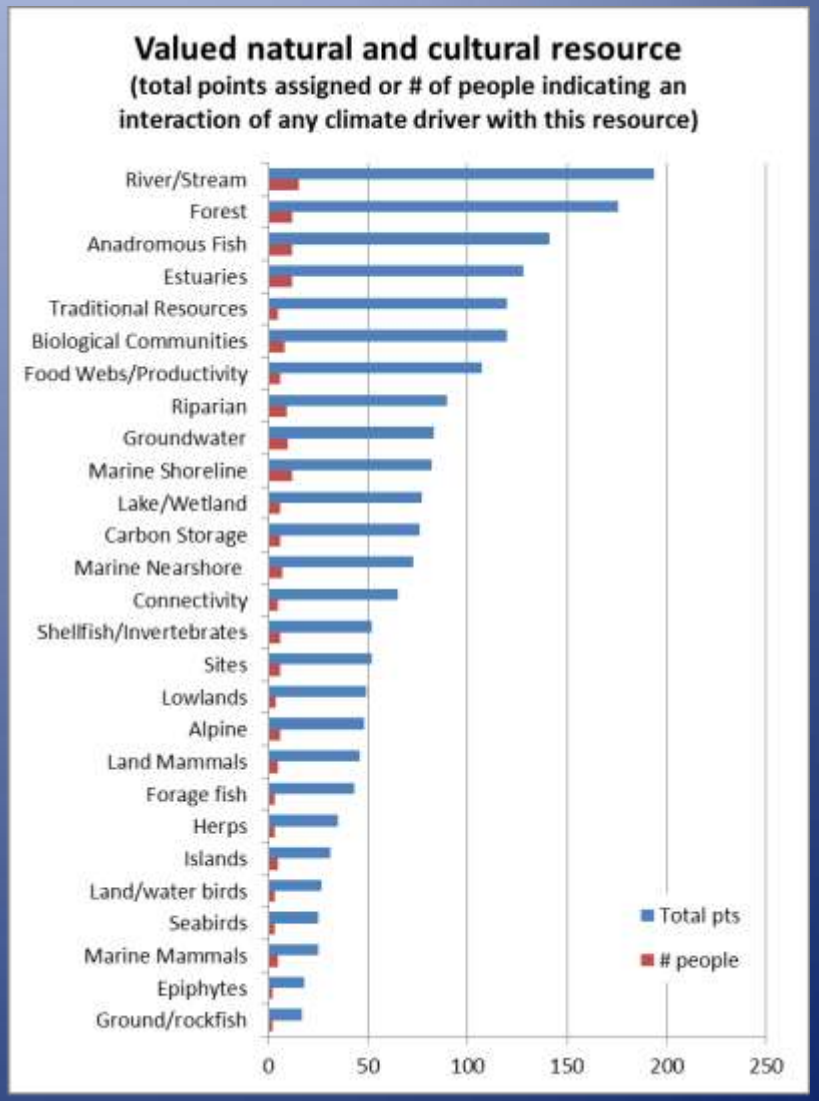
Zooming in on Weighted Ranking

(Cells with >20 votes)



Driver and Resource Ranks

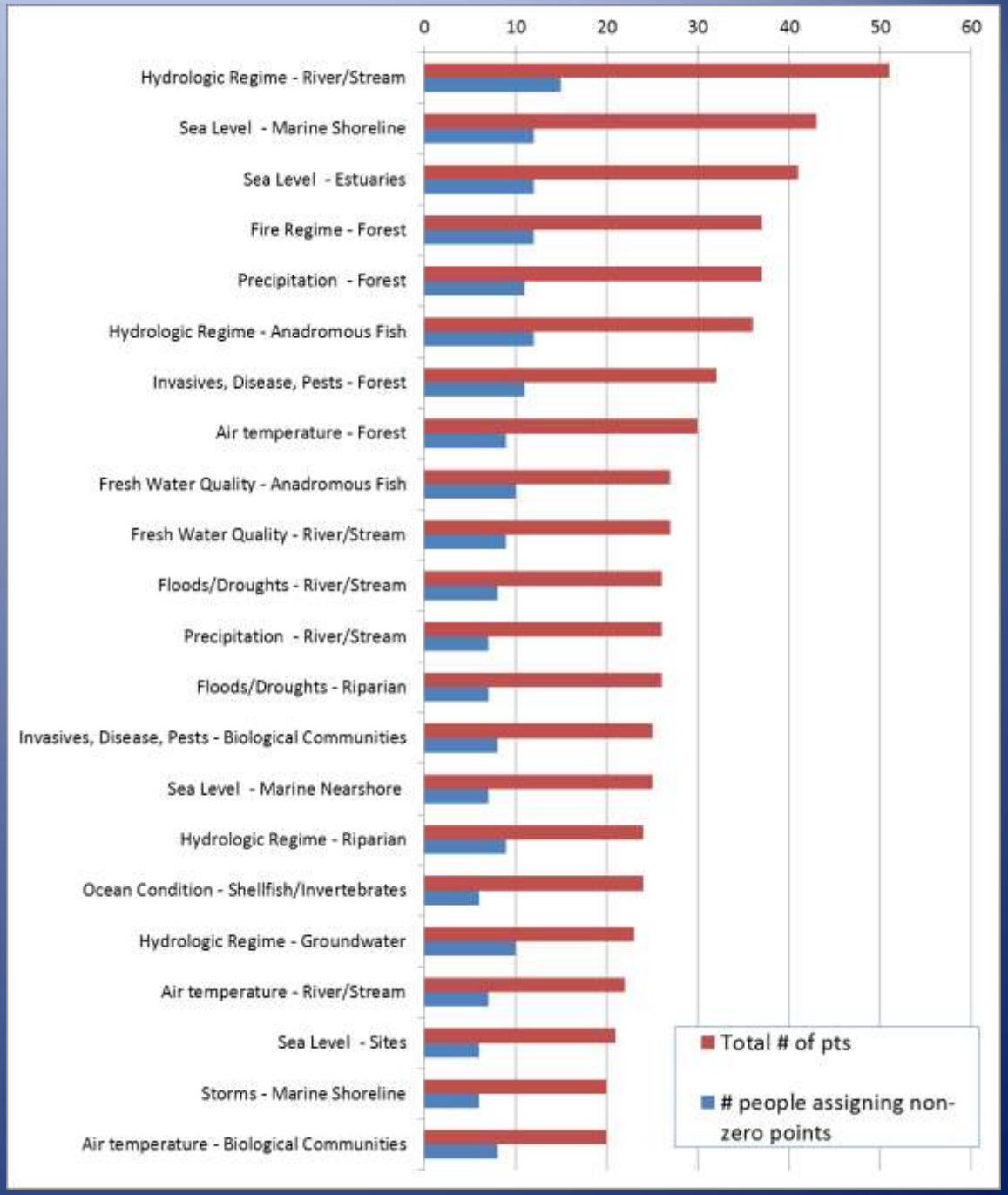




Zooming in on Weighted Ranking

(Cells with >20 votes)

A basis for S-TEK to recognize important issues for the next step?



Some Comments Received

- Exercise was challenging (5) but useful/interesting (5)
- Concerns about how the matrix would be used: in particular, the attention to "Drivers" (especially the primary drivers) seems to focus attention on factors that managers have no control over, and might skew the resulting priorities away from understanding what can be done from a management perspective and too much to what can be learned from a science perspective (3)
- Several people mentioned additional factors that they considered in their scoring, or factors that they would like to see the STEK consider in deciding how to use these results:
  - Focus on areas where there are there are large gaps ("areas that science has not fully explored") or on resources that are under-studied (2)
  - Incorporate results of the NWF focus groups (2)
  - NPLCC is largely coastal, so we should focus on coastal stuff
  - Overall NPLCC focus lead to more emphasis on stressor effects at the process level than on specific valued resources.
- Things people thought were missing
  - A stressor/driver that encompasses the "Shifting climatic regime" (suggested that air temperature and precipitation were proxies)
  - Ability to recognize connections between habitats and species
  - Interaction with land-use and other human stressors
  - Rainforest vegetation as a valued resource
- Things people thought were overlapping
  - "Traditional resources" with some of the specific named resources, such as anadromous fish
  - Ocean conditions, marine water quality, and marine currents

Strategy Outline

- **Introduction and Background**
- **Purpose of S-TEK strategy**
- **Principles**
- **Process for identifying priorities (Methods)**
- **2013-2017 Priorities (Results)**
- **Implementation**
- **Appendices**